

Claims

1. A fusion protein comprising (a) a ligand-binding domain, (b) a domain that associates when a ligand binds to the domain of (a), and (c) a domain comprising a cytokine receptor or a part thereof that imparts proliferation activity to a cell upon the association.

2. The fusion protein of Claim 1, wherein the "domain comprising a cytokine receptor or a part thereof that imparts proliferation activity to a cell upon the association" is derived from a G-CSF receptor.

3. The fusion protein of Claim 1, wherein the "ligand-binding domain" is derived from a steroid hormone receptor.

4. The fusion protein of Claim 3, wherein the steroid hormone receptor is an estrogen receptor.

5. A vector comprising a gene encoding the fusion protein of Claim 1.

6. A cell carrying the vector of Claim 5.

7. A method for selectively proliferating the cell of Claim 6, which comprises exposing the cell of Claim 6 to a ligand capable of acting on the "ligand-binding domain" of the fusion protein of Claim 1.

8. A vector comprising a desired exogenous gene and a gene encoding a fusion protein comprising (a) a ligand-binding domain, (b) a domain that associates when a ligand binds to the domain of (a), and (c) a domain that imparts proliferation activity to a cell upon the association.

9. The vector of Claim 8, wherein the "domain that imparts proliferation activity to a cell upon the association" is derived

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from a cytokine receptor.

10. The vector of Claim 9, wherein the cytokine receptor is a G-CSF receptor.

11. The vector of Claim 8, wherein the "ligand-binding domain" is derived from a steroid hormone receptor.

12. The vector of Claim 11, wherein the steroid hormone receptor is an estrogen receptor.

13. The vector of Claim 8, wherein the "gene encoding a fusion protein" and the "exogenous gene" are located on the same molecule.

14. The vector of Claim 8, wherein the "gene encoding a fusion protein" and the "exogenous gene" are located on separate molecules.

15. A cell carrying the vector according to any one of claims 8 to 14.

16. A method for selectively proliferating the cell of Claim 15, which comprises exposing the cell of Claim 15 to a ligand capable of acting on the "ligand-binding domain" of the fusion protein encoded by the gene contained in the vector of Claim 8.

17. A kit comprising (a) the vector of Claim 5 or Claim 8, and (b) a ligand capable of acting on the "ligand-binding domain" of the fusion protein encoded by the gene contained in the vector.

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